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10/632,045	07/31/2003	Yoram Adler	IL920030012US1	9982

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Stephen C. Kaufman
Intellectual Property Law Dept.
IBM Corporation
P.O. Box 218
Yorktown Heights, NY 10598

EXAMINER	
FLETCHER, JAMES A	
ART UNIT	PAPER NUMBER
2621	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/632,045	ADLER ET AL.	
	Examiner	Art Unit	
	JAMES A. FLETCHER	2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 September 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *17-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *17-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 17-25 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 17-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dimitrova et al (6,137,544), and further in view of Chen et al (7,046,910).

Regarding claim 17, Dimitrova et al disclose a method for producing a preview of a video sequence, comprising:

- receiving a stream of video frames (Col 3, lines 20-21 “a media processor in the processing device or an external processor, receives the video signals”);
- dividing the stream into successive video segments comprising different, respective numbers of the video frames (Col 3, lines 21-23 “formats the video signals into frames representing pixel data [frame grabbing]”);
- processing the successive video segments to identify respective representative frames thereof (Col 3, lines 24-27 “a host processor…performs significant scene detection and keyframe selection”);

Dimitrova et al are silent regarding receiving a requirement to output the stream with an acceleration factor.

Chen et al teach playing back a stream of selected images representing an accelerated rate (Col 5, lines 16-19 “replace one P-frame from the progressive I-slice refreshed MPEG data stream with a complete I-frame every `refresh rate` (N) number of frames”).

Chen et al also teach the receipt of a command to output the accelerated stream (Col 4, lines 10-14 “trick play modes can comprise, for example, pause, scan forward, scan backward, jump, and still frame displays [e.g., for film indexing]. Such features are particularly advantageous for use with video on demand [VOD] services”).

As taught by Chen et al, receiving a requirement to display selected frames in an accelerated playback and displaying selected frames for an accelerated playback was well known to those of ordinary skill in the art at the time of the invention, and it would be obvious to modify Dimitrova et al in order to utilize their frame selection process in order to provide an accelerated display.

Regarding claim 18, Dimitrova et al disclose a method for producing a preview of a video sequence wherein

- the respective representative frames and the successive video segments respectively comprise a given representative frame and a corresponding given video segment having a given number of video frames (Col 4, lines 39-41 “For automatic significant scene detection, the present invention attempts

to detect when a scene of a video has changed or a static scene has occurred"), and

- wherein the given representative frame comprises a first frame-content (Col 4, lines 48-50 "From each scene, one or more keyframes is extracted to represent the scene. Typically, current theory proposes using the first video [visual] frame in the scene"), and
- wherein the video frames of the given video segment comprise respective second frame-contents (Col 8, lines 8-10 "If SUM[i] is less than a predetermined threshold (thresh2[i] as previously defined), a static scene counter (SSctr) is increased to indicate a possible static scene"), and
- comprising selecting the given number of video frames of the given video segment so that the first frame-content differs from each of the respective second frame-contents by no more than a set of pre-selected thresholds (Col 5, lines 58-64 "After processing each of the macroblocks of the current video frame, a summed difference is obtained for each luminance block and each chrominance block of the current video frame. Each of the six SUMS is compared to its own upper and lower threshold specific to the type of block for which the SUM has been totaled").

Regarding claim 19, Dimitrova et al disclose a method for producing a preview of a video sequence wherein the respective representative frames and the successive video segments respectively comprise a given representative frame and a corresponding given video segment, the method further comprising:

- storing as the given video segment a group of video frames, comprising N video frames F(1), ..., F(i), ... F(N), where i and N are integers greater than 1, $i \leq N$, and wherein video frame F(i) comprises a first frame-content (Col 6, lines 22-25 "When the counter reaches a predetermined number, [in this example, 30], the most previous video frame saved in the temporary memory is transferred to the frame memory");
- selecting a subset of n video frames, $n \leq i$, from the N video frames, the subset comprising video frames preceding video frame F(i), the subset comprising respective second frame-contents (Col 9, lines 23-28 "After all the macroblocks of a frame have been analyzed, if the second macroblock counter is above a second predetermined frame threshold (f2th) of 250, the video frames are considered the same and a frame counter (Fctr) is set. MB2ctr is reset and a next frame is analyzed"); and
- selecting i to have a largest integral value such that that the first frame-content differs from each of the respective second frame-contents by no more than a set of pre-selected thresholds (Col 6, lines 22-25 "When the counter reaches a predetermined number, [in this example, 30], the most previous video frame saved in the temporary memory is transferred to the frame memory").

Regarding claim 20, Dimitrova et al disclose a method for producing a preview of a video sequence wherein a further subset of video frames comprises all video frames in the group succeeding video frame F(i), the further subset comprising

respective third frame-contents, the method further comprising selecting N to be a largest integer so that the first frame-content differs from each of the respective third frame-contents by no more than the set of pre-selected thresholds (Col 8, lines 8-10 "If SUM[i] is less than a predetermined threshold (thresh2[i] as previously defined), a static scene counter (SSctr) is increased to indicate a possible static scene").

Regarding claim 21, Dimitrova et al disclose a method for producing a preview of a video sequence wherein selecting the subset of n video frames comprises:

- sequentially incrementing i by +i until the first frame-content differs from one of the respective second frame-contents by more than the set of pre-selected thresholds (Col 6, lines 22-25 "When the counter reaches a predetermined number, [in this example, 30], the most previous video frame saved in the temporary memory is transferred to the frame memory"); and
- replacing one of the n video frames with video frame F (i-1) (Col 6, lines 26-27 "the next to last frame is saved to possibly represent a static scene").

Regarding claim 22, Dimitrova et al disclose a method for producing a preview of a video sequence wherein the one of the n video frames comprises video frame F(i-2) (Col 6, lines 8-18 "If SUM[i] is less than a predetermined threshold…a static scene counter (SSctr) is increased to indicate a possible static scene").

Regarding claim 23, Dimitrova et al disclose a method for producing a preview of a video sequence wherein dividing the stream of video frames comprises receiving a group of N video frames F(1), F(2), ..., F(i), ... F(N), where i and N are integers greater than i, $i \leq N$, and wherein video frame F(i) comprises a first frame-content, and wherein

processing the successive video segments comprises, for video frame F(i), storing a subset of n frames, n comprising respective second frame-contents, the method further comprising:

- determining whether the first frame-content is similar to all the respective second frame-contents (Col 7, line 63 – Col 8, line 1 “After processing each of the macroblocks of the current video frame, a summed difference is obtained for each luminance block and each chrominance block of the current video frame. Each of the six SUMS is compared to its own upper and lower threshold specific to the type of block for which the SUM has been totaled” and Col 8, lines 8-10 “If SUM[i] is less than a predetermined threshold (thresh2[i] as previously defined), a static scene counter (SSctr) is increased to indicate a possible static scene”);
- if so, appending the video frame F(i) to the subset so as to update the subset (Col 8, lines 8-10 “If SUM[i] is less than a predetermined threshold (thresh2[i] as previously defined), a static scene counter (SSctr) is increased to indicate a possible static scene”);
- if not, accepting a frame F(i-l) preceding the video frame F(i) as a given representative frame, comprised in the respective representative frames, for the N video frames, and determining a maximum value of N so that, for successive frames F(i), F(i+1), F(i+2), ... , F(N) having respective third frame-contents, the first frame-content is similar to all the respective third frame-contents (Col 8, lines 4-6 “If SUM[i] is greater than a predetermined threshold

(thresh1[i] as previously defined), the current video frame is saved in the frame memory" and Col 8, lines 13-15 "When SSctr reaches a predetermined number, 30, the most previous video frame saved in the temporary memory is transferred to the frame memory").

Regarding claim 24, Dimitrova et al disclose a method for producing a preview of a video sequence wherein the group of N video frames are sequential in time (Col 2, lines 1-4 "The present invention may detect significant scenes and select keyframes of source video, based on calculations using DCT coefficients and comparisons to various thresholds.").

Regarding claim 25, Dimitrova et al disclose a method for producing a preview of a video sequence wherein the group of N video frames comprises non-sequential-in-time frames (Col 2, lines 10-11 "The present invention additionally allows for filtering of keyframes belonging to commercials out of the visual index").

Conclusion

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JAMES A. FLETCHER whose telephone number is (571)272-7377. The examiner can normally be reached on 7:45-5:45 M-Th, first Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Miller can be reached on (571) 272-7353. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/John W. Miller/
Supervisory Patent Examiner, Art Unit 2623

JAF
17 July 2008

/Thai Tran/

Supervisory Patent Examiner, Art Unit 2621